

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Please replace the paragraph beginning page 1, line 13, with the following rewritten paragraph:

In recent years, the image compression technologies have become essential in cases where image data are transmitted on a narrowband channel or stored in a storage medium of small capacity. MPEG (Moving Picture Experts Group) as a media coding standard of the International Standardization Organization (ISO) is a typical one of these image compression technologies, and has come into wide use. In a system compliant with MPEG-4 which is the newest in MPEG standards and is being put to practical use, it is possible to carry out decoding processes for plural media streams in parallel and compose images corresponding to the respective streams to display the same.

Please replace the paragraph beginning page 2, line 18, with the following rewritten paragraph:

In this decoder 800, the demultiplexing means 802 separates the input multiplexed stream 801 into the streams 803 and 806 by the demultiplexing process. Then, the first decoding means 804 decodes the stream 803 and outputs the decoded image data 805. Similarly, the second decoding means 807 decodes the stream 806 and outputs the decoded image data 808. When the decoded image data 805 and ~~806~~ 808 are input to the composition means 809, the composition means 809 composes the decoded image data 805 and ~~806~~ 808, and outputs the composed image

data 810 to a display monitor (not shown). Thereby, on the display monitor, a composed image is displayed on the basis of the composed image data 810.

Please replace the paragraph beginning page 3, line 10, with the following rewritten paragraph:

Thus, the above-mentioned prior art decoder decodes the plural streams included in the multiplexed stream by the decoding means corresponding to the respective streams, and thus requires as many of the decoding means as may as the streams. Thus, the costs are high, So, especially for portable devices having such a this decoder, are high in costs.

Please replace the paragraph beginning page 3, line 16, with the following rewritten paragraph:

To be more specific, normally the above-mentioned decoding means can normally be realized by software or special hardware, while in the portable devices decoding means realized by special hardware are often mounted to reduce the power consumption. However, when a plurality of the special hardware such as the decoding means are used in electronic devices such as the decoders, the costs of the devices are increased and, in some cases, the devices are upsized.

Please replace the paragraph beginning page 4, line 1, with the following rewritten paragraph:

It is an object of the present invention to provide a decoder and a decoding method, which can decode plural streams included in a multiplexed stream by one decoding means, thereby suppressing an increase in costs or the upsizing of devices while reducing the power consumption, as well as a multiplexer and a multiplexing method, which multiplex a stream so as to enable decoding by a decoder with ~~the~~ lower power consumption and of lower costs.

Please replace the paragraph beginning page 4, line 9, with the following rewritten paragraph:

Other objects and advantages of the present invention will become apparent from the detailed description. ~~and specific~~ Specific embodiments described are provided only for illustration since various additions and modifications within the spirit and scope of the invention will be apparent to those of skill in the art from the detailed description.

Please replace the paragraph beginning page 17, line 24, with the following rewritten paragraph:

This decoder 100 further comprises a first decoding switch position detection means 113 for detecting a position at which a decoding process for the stream 105 which is being decoded as a decoding target in the decoding means 109 can be switched to a decoding process for the other stream, and a second decoding switch position detection means 115 for detecting a position at

which a decoding process for the stream 108 which is being decoded as a decoding target in the decoding means 109 can be switched to a decoding process for the other stream.

Please replace the paragraph beginning page 18, line 9, with the following rewritten paragraph:

The decoder 100 further comprises a decoding stream switching control means 117 for judging whether the switching of the decoding process for the stream is to be executed or not, in accordance with signals 114 and 116 indicating the decoding switch positions in the streams 105 and 108, a stream selector switch 119 for selecting one of the streams 105 and 108 in accordance with a signal 118 indicating the judgement result of the decoding stream switching control means 117 and outputting the selected stream to the decoding means 109, a changeover switch 120 for outputting one of the decoded signals corresponding to the respective streams 105 and 108 from the decoding means 109 in accordance with the signal 118 indicating the judgement result, and a composition means 111 for composing the decoded signals corresponding to the respective streams 105 and 108 output from the changeover switch 120 and outputting a composed signal 112 to a display apparatus (not shown).

Please replace the paragraph beginning page 19, line 3, with the following rewritten paragraph:

In this first embodiment, one decoding means is used for plural streams by switching. However, in some cases, the positions in the stream at which the decoding can be switched from

a stream which is being decoded by the decoding means to a stream other than that stream are restricted for the following reasons.

Please replace the paragraph beginning page 20, line 16, with the following rewritten paragraph:

The demultiplexing means 102 carried carries out the demultiplexing process for the input multiplexed stream 101 and outputs the streams 103 and 106 included in the multiplexed stream. These streams 103 and 106 are stored in the first stream buffer 104 and the second stream buffer 107 by prescribed amounts, respectively by stream. Then, the stream 105 is output from the first stream buffer 104, and the stream 108 is output from the second stream buffer 107.

Please replace the paragraph beginning page 25, line 12, with the following rewritten paragraph:

Further, the decoding switch position (switchable position) can also be detected also from information included in the stream.

Please replace the paragraph beginning page 25, line 15, with the following rewritten paragraph:

In some of the existing multiplexing methods, the multiplexing process is also carried out also for information which indicates a start or end position of a frame in video data. For example, MPEG1 or 2 compliant video formats in a RTP (real-time transport protocol) as an

Internet standard protocol, have a flag indicating the end of a video frame. Therefore, the end of the frame can be detected by detecting this flag.

Please replace the paragraph beginning page 29, line 5, with the following rewritten paragraph:

In the MPEG system or the like, the multiplexing is carried out so that one frame of data has been stored in the buffer by the display time indicated by the time stamp. Accordingly, it may be expected that the above-mentioned problems do not arise when the decoding process is carried out in accordance with the time stamp. However, in cases where data transmission is performed using a transmission line having a larger jitter of transmission delay, there are some cases where one frame of data has not ~~been~~ arrived even at the display time indicated by the time stamp. Therefore, also when the time stamp is included in the stream, the method for carrying out the decoding process for the stream after confirming that the stream has been stored up to the decoding switch position is effective.

Please replace the paragraph beginning page 40, line 8, with the following rewritten paragraph:

This decoder comprises a stream conversion means 1002 for converting a stream to be demultiplexed into a stream having other data structure, a stream buffer 1004 for containing the converted stream, a decoding means 1009 for decoding an output of the stream buffer 1004, a decoding switch position detection means 1013 for detecting a position in a decoding target

stream 1005 being decoded by the decoding means 1009, at which a decoding process for the stream being decoded can be switched to a decoding process for a stream other than this stream, a decoding stream switching control means 1017 for judging whether the decoding process for the stream is switched or not in accordance with a signal 1014 indicating the decoding switch position in the stream 1005, a change switch 120 for outputting one of the decoded signals corresponding to the respective streams from the decoding means 1009 in accordance with a signal 1018 indicating the judgement result, and a composition means 111 for composing the decoded signals corresponding to the respective streams output from the switch 120 and outputting a composed signal 112 to a display device (not shown).

Please replace the paragraph beginning page 41, line 4, with the following rewritten paragraph:

Then Next, the operation of the decoder will be described. This decoder receives the multiplexed stream shown on the right in figure 6. Information concerning, for example, the length of a stream corresponding to one frame is previously set, and when the stream is input, the stream conversion means 1002 recognizes the end or beginning of one frame using this information. Then, the stream conversion means 1002 adds an identifier to the end or beginning 1102, 1104, 1106 or 1108 of the stream as shown in figure 11. Here, numerals 1101 and 1103 in figure 11 denote first and second streams, respectively, and first and second objects which are transmitted by these streams are demodulated and displayed at, for example, time t. Numerals 1105 and 1107 denote first and second streams, respectively, and first and second objects which

are transmitted by these streams are demodulated and displayed at, for example, time $t + \delta t$. The output 903 of the stream conversion means 902 in figure 9 has the same format as in figure 11.

Please replace the paragraph beginning page 44, line 5, with the following rewritten paragraph:

The multiplexing means 407 ~~carried~~ carries out the multiplexing process by alternately switching the streams 701 and 702 input for example by one frame, as they are as the multiplexing units 703 and 704, at the decoding switch positions 701a and 702a. In the decoder which receives the multiplexed stream obtained by multiplexing the streams by the above-mentioned method, the end position of the multiplexing unit is detected by the demultiplexing, and the decoding processes for plural streams can be carried out in parallel, taking the detected position as the decoding switch position.